UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/091,279	03/06/2002	Arnaud Gueguen	220260US2	5585

22850 7590 12/02/2005

OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER	
TORRES, JOSEPH D	

ART UNIT	PAPER NUMBER
2133	

DATE MAILED: 12/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/091,279	GUEGUEN, ARNAUD	
	Examiner	Art Unit	
	Joseph D. Torres	2133	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 October 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *27 December 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 10/17/2005 have been fully considered but they are not persuasive.

The Applicant recites, "Applicants respectfully traverse the objection to Claim 11. In particular, Applicants respectfully submit that it is proper for a dependent claim to refer to an independent claim in the body of the dependent claim. Applicants request that the Examiner provide a reference to a Patent Office rule supporting the assertion that Claim 11 is in improper form."

Claim 1 is "A computer-implemented method of optimizing a size of coded data blocks". 37 CFR 1.75(c) requires the dependent claim to further limit a preceding claim. Claim 11 fails to add additional steps limiting the computer-implemented method of optimizing a size of coded data blocks of claim 1. Clearly, claim 11 is a blatant attempt to avoid paying additional fees for an additional independent claim.

The Applicant contends, "Moreover, Applicants submit that 35 U.S.C. § 112, sixth paragraph, does not require that the elements expressed in "means-for" language require the use of "hardware." Accordingly, Applicants respectfully traverse the rejection of Claims 10-13 under 35 U.S.C. § 112, second paragraph.

Claims 10-13 were not rejected under 35 U.S.C. § 112, second paragraph. They were rejected 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. Claim 10 recites a device in the preamble, which is hardware and there is no mention of hardware nor is their any mention of any limitation that could be construed to require in the body of the claims amounting to a gap between the recited device in the preamble of claim 10 and elements in the body of the claim.

The Applicant contends, "Applicants respectfully traverse the rejection of the claims under 35 U.S.C. § 112, second paragraph, regarding the term "based on." Applicants respectfully submit that the use of the term "based on" in the claims is not vague or indefinite, merely broad. Applicants respectfully submit that, contrary to the implication in the Office Action, the recitation of an equation involving the maximum error rate is not required. Rather, the claims properly broadly recite, e.g., that the step of determining a maximum number of iterations is based on the maximum error rate".

The Examiner disagrees and asserts that error correction schemes are implemented and designed to insure that a maximum acceptable error rate is not exceeded; hence every aspect of an error correction scheme is based on a maximum acceptable error rate. That is either the recitation "based on the maximum acceptable error rate" fails to further limit the claim in which case it should be removed or the Applicant is attempting to introduce some other unknown limitation without recognizing the ramifications of the language "based on the maximum acceptable error rate".

For now the Examiner assumes that every aspect of an error correction scheme is based on a maximum acceptable error rate and "based on the maximum acceptable error rate" fails to further limit the claim.

The Applicant contends, "Applicants respectfully submit that the rejection of Claims 1-9 under 35 U.S.C. § 101 is rendered moot by the present amendment to Claim 1. Claim 1 has been amended to be directed to a computer-implemented method of optimizing a size of coded data blocks, and is therefore directed to statutory subject matter".
The Examiner disagrees and asserts that in In re Lowry, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994) a claim to data structure stored on a computer readable medium that increases computer efficiency held statutory. There is no indication in the specification or in the claims that the method encompassed by the functional descriptive language in the body of claim 1 is directed to supporting any useful work or utility for a computer. The Examiner asserts that one of ordinary skill in the art at the time the invention was made that any computer program can be implemented on a computer even if computer implementation is not claimed, but the fact is, computer programs are still not statutory.

The Applicant contends, "Applicants respectfully traverse the rejection of Claims 10-13 under 35 U.S.C. § 101. In this regard, Applicants note that Claims 10-13 are not directed to methods, rather to devices, which are statutory".

The Examiner asserts that the body of claim 10 was rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. Claim 10 recites a device in the preamble, which is hardware and there is no mention of hardware nor is their any mention of any limitation that could be construed to require in the body of the claims amounting to a gap between the recited device in the preamble of claim 10 and elements in the body of the claim.

A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

The Applicant contends, "the `283 patent fails to disclose determining prior to performing the decoding process and based on the maximum error, a submultiple block size among a plurality of integer block sizes N/k" ... "the `283 patent fails to disclose how to select Nbl, other than as an integer multiple of N. Further, the `283 patent fails to disclose-that the selection of Nbl is based on the maximum error rate".

The Examiner disagrees and asserts that Nbl must be selected prior to decoding otherwise decoding could not take place. Furthermore; error correction schemes are implemented and designed to insure that a maximum acceptable error rate is not

exceeded; hence every aspect of an error correction scheme is based on a maximum acceptable error rate.

The Applicant contends, "the determination of the maximum number of iterations disclosed by the `709 patent is not determined prior to the decoding process such that the mean number of iterations will be minimized".

The Examiner disagrees and asserts that the decoding process starts at step 204 in Figure 2 of '709 and that decoding iterations are aborted at step 208 for the explicit purpose of minimizing the mean number of iterations to only the required interactions for correctly decoding a block of data.

All amendments and arguments by the applicant have been considered. It is the Examiner's conclusion that claims 1-13 are not patentably distinct or non-obvious over the prior art of record in view of the references, Zhang; Vicki Ping et al. (US 6233709 B1, hereafter referred to as Zhang) and Stephen; Karen J. et al. (US 6484283 B2, hereafter referred to as Stephen) in view of Lee; Pil Joong et al. (US 6289486 B1, hereafter referred to as Lee) as applied in the last office action, filed 08/02/2005. Therefore, the rejection is maintained.

Claim Objections

2. Claim 11 is objected to because of the following informalities: it is not clear whether the Applicant intends for claim 11 to be an independent claim with all of the

limitations of claim 10 or whether the Applicant intends for claim 11 to be dependant on claim 10. The Examiner suggests either writing claim 11 as an independent claim with all of the limitations in claim 10 inserted into claim 11 or properly writing claim 11 as an independent claim with the dependency recited in the preamble.

Appropriate correction is required.

The Applicant recites, "Applicants respectfully traverse the objection to Claim 11. In particular, Applicants respectfully submit that it is proper for a dependent claim to refer to an independent claim in the body of the dependent claim. Applicants request that the Examiner provide a reference to a Patent Office rule supporting the assertion that Claim 11 is in improper form."

Claim 1 is "A computer-implemented method of optimizing a size of coded data blocks". 37 CFR 1.75(c) requires the dependent claim to further limit a preceding claim. Claim 11 fails to add additional steps limiting the computer-implemented method of optimizing a size of coded data blocks of claim 1. Clearly, claim 11 is a blatant attempt to avoid paying additional fees for an additional independent claim.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 10-13 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. Claims 10, 12 and 13 recite a device in the

preamble. The omitted elements are as follows: there is no connection in the body of claims 10, 12 and 13 to hardware of any device nor is their any indication that any of the elements in the body of claims 10, 12 and 13 require any hardware.

Claim 1 recites, "determining a maximum number of iterations among a plurality of integers corresponding to a maximum number of iterations to be applied by the iterative decoding process on a coded data block, **based on** the maximum error rate" [Emphasis Added]. Missing is the relationship between "determining a maximum number of iterations" and "the maximum error rate" and, in particular, the basis or the role maximum error rate plays in determining a maximum number of iterations.

The Applicant contends, "Applicants respectfully traverse the rejection of the claims under 35 U.S.C. § 112, second paragraph, regarding the term "based on." Applicants respectfully submit that the use of the term "based on" in the claims is not vague or indefinite, merely broad. Applicants respectfully submit that, contrary to the implication in the Office Action, the recitation of an equation involving the maximum error rate is not required. Rather, the claims properly broadly recite, e.g., that the step of determining a maximum number of iterations is based on the maximum error rate".

The Examiner disagrees and asserts that error correction schemes are implemented and designed to insure that a maximum acceptable error rate is not exceeded; hence every aspect of an error correction scheme is based on a maximum acceptable error rate. That is either the recitation "based on the maximum acceptable error rate" fails to further limit the claim in which case it should be removed or the Applicant is attempting

to introduce some other unknown limitation without recognizing the ramifications of the language "based on the maximum acceptable error rate".

Claims 1-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 1 recites, "determining a maximum number of iterations among a plurality of integers corresponding to a maximum number of iterations to be applied by the iterative decoding process on a coded data block, **based on** the maximum error rate" [Emphasis Added]. The term "based on" is indefinite since it does not set forth the basis or the role maximum error rate plays in determining a maximum number of iterations.

Claim 10 recites, "determining a maximum number of iterations among a plurality of integers corresponding to a maximum number of iterations to be applied by the iterative decoding process on a coded data block, **based on** the maximum error rate" [Emphasis Added]. The term "based on" is indefinite since it does not set forth the basis or the role maximum error rate plays in determining a maximum number of iterations.

Claim 12 recites, "determining a maximum number of iterations among a plurality of integers corresponding to a maximum number of iterations to be applied by the iterative decoding process on a coded data block, **based on** the maximum error rate" [Emphasis Added]. The term "based on" is indefinite since it does not set forth the basis or the role maximum error rate plays in determining a maximum number of iterations.

Claim 13 recites, "determining a maximum number of iterations among a plurality of integers corresponding to a maximum number of iterations to be applied by the iterative decoding process on a coded data block, **based on** the maximum error rate" [Emphasis Added]. The term "based on" is indefinite since it does not set forth the basis or the role maximum error rate plays in determining a maximum number of iterations.

Claim 11 recites, "an iterative decoding device **according to** Claim 10" [Emphasis Added]. The term "according to" is indefinite since it does not set forth the basis or the role Claim 10 plays in an iterative decoding device.

In addition, claim 11 is indefinite since it is not clear whether the Applicant intends for claim 11 to be an independent claim with all of the limitations of claim 10 or whether the Applicant intends for claim 11 to be dependant on claim 10. The Examiner suggests either writing claim 11 as an independent claim with all of the limitations in claim 10 inserted into claim 11 or properly writing claim 11 as an independent claim with the dependency recited in the preamble.

The Applicant recites, "Applicants respectfully traverse the objection to Claim 11. In particular, Applicants respectfully submit that it is proper for a dependent claim to refer to an independent claim in the body of the dependent claim. Applicants request that the Examiner provide a reference to a Patent Office rule supporting the assertion that Claim 11 is in improper form."

Claim 1 is "A computer-implemented method of optimizing a size of coded data blocks". 37 CFR 1.75(c) requires the dependent claim to further limit a preceding claim. Claim 11 fails to add additional steps limiting the computer-implemented method of optimizing

a size of coded data blocks of claim 1. Clearly, claim 11 is a blatant attempt to avoid paying additional fees for an additional independent claim.

Claims 10-13 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. Claims 10, 12 and 13 recite, "determining a maximum number of iterations among a plurality of integers corresponding to a maximum number of iterations to be applied by the iterative decoding process on a coded data block, **based on** the maximum error rate" [Emphasis Added]. The omitted structural cooperative relationships are: the relationship between "determining a maximum number of iterations" and "the maximum error rate" and, in particular, the basis or the role maximum error rate plays in determining a maximum number of iterations.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 1-13 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claims 1-13 recites steps for an abstract algorithm that can be carried out by hand or in a computer program. Abstract algorithms are non-statutory. Computer programs are non-statutory.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 1-9, 10, 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhang; Vicki Ping et al. (US 6233709 B1, hereafter referred to as Zhang) in view of Stephen; Karen J. et al. (US 6484283 B2, hereafter referred to as Stephen).

See the Non-Final Action filed 08/02/2005 for detailed action of prior rejections.

6. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zhang; Vicki Ping et al. (US 6233709 B1, hereafter referred to as Zhang) and Stephen; Karen J. et al. (US 6484283 B2, hereafter referred to as Stephen) in view of Lee; Pil Joong et al. (US 6289486 B1, hereafter referred to as Lee).

See the Non-Final Action filed 08/02/2005 for detailed action of prior rejections.

Conclusion

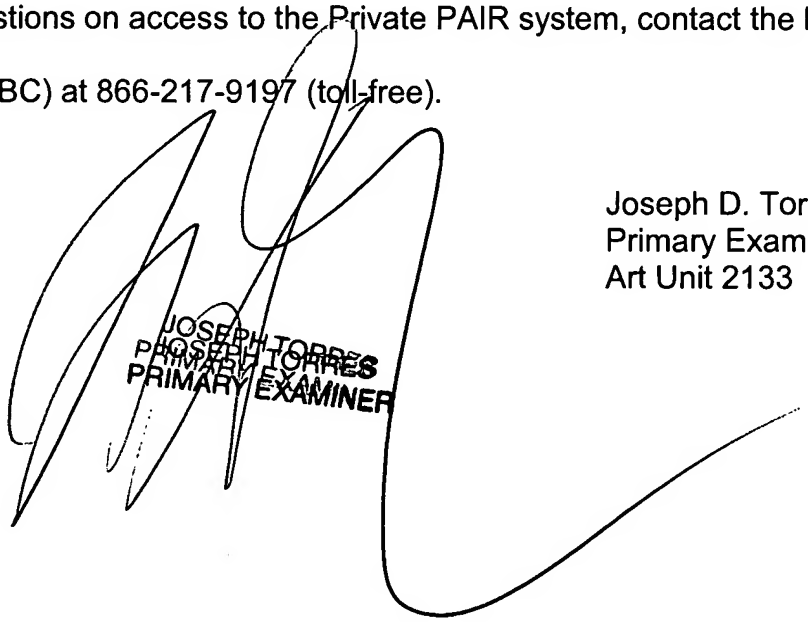
7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph D. Torres whose telephone number is (571) 272-3829. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert Decady can be reached on (571) 272-3819. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Joseph D. Torres, PhD
Primary Examiner
Art Unit 2133